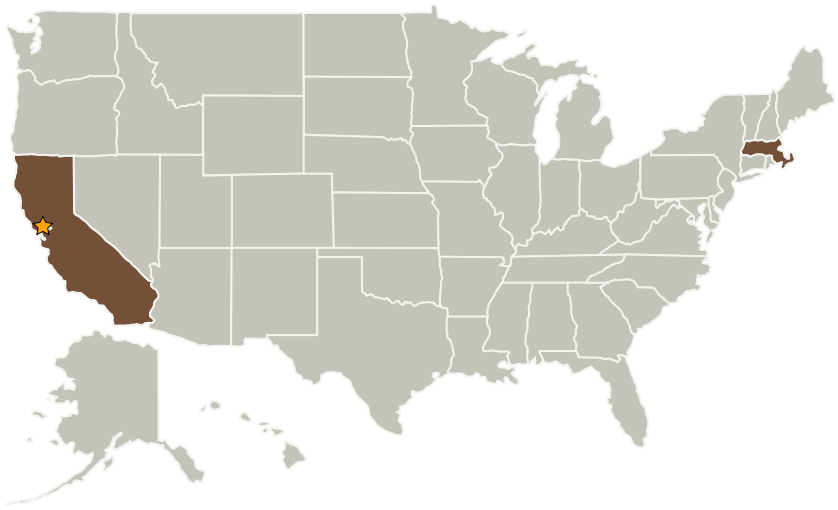
Spacecraft Power Monitor, Phase I

Completed Technology Project (2006 - 2006)

Project Introduction

This SBIR Phase I project will develop the Spacecraft Power Monitor (SPM) which will use non-intrusive electrical monitoring (NEMO). NEMO transforms the power distribution network in an spacecraft into a multiple-use service, providing not only power distribution but also a diagnostic monitoring capability based on careful measurement and analysis of power usage and start up and shut down transients. In depth analysis of this data enables real time assessment of system and component functioning and identifies potential system and component faults and failutes. We will use NEMO's ability to track load operation to verify that the systems and components of a spacecraft are operating properly This "spacecraft power monitor" or SPM, based on NEMO, will notify astronauts or ground support personnel when unexpected sequences occur. It can also generally track the health and diagnostic condition of key loads on the system. The system is light weight, small and inexpensive because the system requires only a sensor at the mains power input and uses existing power wiring to carry data. Phase I will involve ground measurements of spacecraft components. Phase II will involve measurements and analysis of an integrated system.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
NEMOmetrics Corp.	Supporting Organization	Industry	Boston, Massachusetts

Primary U.S. Work Locations	
California	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.3 Power Management and Distribution
    - TX03.3.3 Electrical Power Conversion and Regulation